

45 are connected to the contacts, the ventilation openings positioned under the pair of arms and provides air to flow between the mother board and the electronic module.

22. (New) A connector according to Claim 21, further comprising a rectifying member with an opening to take in air, wherein the rectifying member is installed at ends of said pair of arms to support an end part opposite to the connected end part of the electronic module.

23. (New) A connector according to Claim 21, further comprising a supporting member installed at ends of said pair of arms to support an end part opposite to the connected end part of the electronic module.

24. (New) A connector according to Claim 21, wherein at least one of the ventilation openings has a configuration that is wider at an external surface.

Remarks

Reconsideration of claims 1-17 and 19-20, and consideration of new claims 21-24 is requested. Claim 18 was canceled. Claims 1-17 and 19-20 were amended. The Abstract was amended to comply with proper U.S. format.

Withdrawal of the rejection of claims 3-4 is requested in light of the amendments made to these claims.

Rejection of claims 1-2, 6, 11, 15-17 and 20 under 35 USC 102(e) as being anticipated by Crane, Jr. et al. (US 6,050,850) is traversed with respect to the claims as amended.

Applicants' invention is particularly suitable for connecting a motherboard and a plate-like electronic module, which has electrical conductive pads at an end part. The present invention is not directed to male-female type connectors such as disclosed in Patent No. 09/050,850 (the '850 patent).

Applicants' invention includes a housing adaptable for mounting a motherboard. The housing is provided with a main body with a pair of arms extending and a first ventilation opening. The main body has contacts of which one end is adapted for electrical connection to the motherboard and an opposite end adapted for electrical connection with the electrical conductive pads of an electronic module. The pair of arms extend from ends of the main body to secure the electronic module above the motherboard a predetermined distance when the electrical conductive pads of the electronic module are connected to the contacts. When the electronic module is inserted in the main body, an opposite end of each contact of the main body is electrically connected with the electrical conductive pads of the electronic module. The electronic module is thus secured by the pair of arms, and the electronic module and mother board are electrically connected.

The housing also includes a first ventilation opening positioned under the main body, which provides air to flow between the mother board and the electronic module. In some cases, a second ventilation opening is provided positioned under the pair of arms to also provide air to flow between the mother board and the electronic module. By means of the first ventilation opening and/or second ventilation openings, the air between the mother board and the electronic module flows under and through the main body and/or the arms to cool the electronic module.

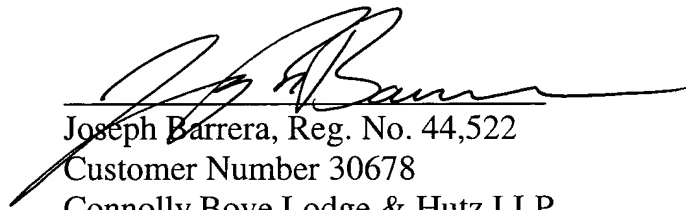
Applicants' invention is particularly suited for a plate-like electronic module with electronic chips mounted on both sides of the electronic module to provide for an increase in chip density on the module. In contrast, the male-female type connectors of the '850 patent requires the installation of either the male connector or female connector onto the plate-like electronic module. See, Figs. 23, 24 of the '850 patent. For example, the connector described in the '850 patent requires the installation of the female connector onto the plate-like electronic module and the male connector to be installed on the motherboard. As a result, the area for placement of electronic chips decreases by the area taken up by the female connector by an area for installing the female connector. The density at which the electronic chips can be installed on the connector is less.

In view of the above, consideration and allowance are, therefore, respectfully solicited.

In the event the Examiner believes an interview might serve to advance the prosecution of this application in any way, the undersigned attorney is available at the telephone number noted below.

The Director is hereby authorized to charge any fees, or credit any overpayment, associated with this communication, including any extension fees, to CBLH Deposit Account No. 22-0185.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Joseph Barrera", is written over a horizontal line.

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In the Claims:

Claim 18 was canceled.

Claims 1-17 and 19-20 were amended as follows:

1. (Amended) A connector [fittable with an electronic module, said connector comprising a housing means to hold said electronic module and a ventilation means, arranged with respect to said housing means, to permit air to pass along said electronic module] for connecting a mother board and a plate-like electronic module with electrical conductive pads at an end part, comprising a housing and a first ventilation opening, wherein

the housing is mounted on the mother board and provided with a main body and a pair of arms,

the main body has contacts of which one end is adapted for electrical connection to the mother board and an opposite end is adapted for electrical connection with the electrical conductive pads of the electronic module,

the pair of arms extend from the main body securing the electronic module above the mother board a predetermined distance when the electrical conductive pads of the electronic module are connected to the contacts,

the first ventilation opening is disposed under the main body and provides air to flow between the mother board and the electronic module.

2. (Amended) A connector [fittable with an electronic module, said connector comprising a housing means having a main body mounting thereon contacts to be connected with conductive pads provided at a front end of said electronic module and a pair of arms, projected from opposite ends of said main body, to hold said electronic module at opposite end portions thereof; and a first ventilation means provided at said

main body or at least one of a pair of] according to claim 1, further comprising second ventilation [means provided at said pair of arms, respectively] openings, wherein
the second ventilation openings are disposed under the pair of arms and enable air to flow between the mother board and the electronic module.

3. (Amended) A connector according to Claim [2, wherein] 1, further comprising a rectifying [means which has] member with an opening to take in air [and on which an end of said electronic module at the side opposite the fitting side of the same is rested is mounted on], wherein the rectifying member is installed at ends of said pair of arms to support an end part opposite to the connected end part of the electronic module.

4. (Amended) A connector according to Claim [2, wherein] 1, further comprising a supporting [means on which an end of said electronic module at the side opposite the fitting side of the same is rested is provided] member installed at ends of said pair of arms to support an end part opposite to the connected end part of the electronic module.

5. (Amended) A connector according to Claim 2, wherein [said] at least one of the second ventilation [means] openings has a configuration to extend in opening toward outside.

6. (Amended) A connector [fittable with] for connecting a mother board and a plate-like electronic module[, said connector comprising a housing means having a main body mounting thereon contacts to be connected with conductive pads provided at a front end of said electronic module and a pair of arms, projected from opposite ends of said main body, to hold said electronic module at opposite end portions thereof; a ventilation means provided at said main body; and wall means provided at said pair of arms, respectively] with electrical conductive pads at an end part, comprising a housing, a ventilation opening and wall members, wherein

the housing is mounted on the mother board and provided with a main body and a pair of arms,

the main body has contacts is of which one end is adapted for electrical connection to the mother board and an opposite end for electrical connection with the electrical conductive pads of the electronic module,

the pair of arms extend from ends of the main body to secure the electronic module above the mother board a predetermined distance when the electrical conductive pads of the electronic module are connected to the contacts,

the ventilation opening is disposed under the main body and provides air to flow between the mother board and the electronic module,

the wall members are provided under a pair of arms.

7. (Amended) A connector according to Claim 6, [wherein] further comprising attachment portions [for attachment of said wall members to interconnect said arms of two or more adjacent connectors are formed] positioned at front and rear portions of said pair of arms[, respectively] to interconnect pair of arms of two or more adjacent connectors.

8. (Amended) A connector according to Claim 6, [wherein] further comprising engaging portions [for interconnecting said arms of two or more adjacent connectors are formed] positioned at front and rear portions of said pair of arms[, respectively] to interconnect pair of arms of two or more adjacent connectors.

9. (Amended) A connector according to Claim 7, [wherein] further comprising an upper plate [is] attached [for a topside space that appears when two or more adjacent connectors fitting said electronic modules therein are coupled with each other] to a top surface of the pair of arms to provide a closed volume between the two adjacent connectors.

10. (Amended) A connector according to Claim 6 , [wherein] further comprising a rectifying [means which has] member with an opening to take in air [and on which an end of said electronic module at the side opposite the fitting side of the same is rested is provided], wherein the rectifying member is installed at ends of said pair of arms to support an end part opposite to the connected end part of the electronic module.

11. (Amended) A connector according to Claim [2] 1, wherein said contacts comprise front contacts and rear contacts extending downward from front and rear portions of said main body across said ventilation [means] opening, and said front contacts and said rear contacts each have a streamline section toward an air flowing direction.

12. (Amended) A connector according to Claim [2] 1, wherein said contacts comprise front contacts and rear contacts and rear contacts extending downward from front and rear portions of said main body across said ventilation [means] opening and are provided with closure [means] members to close space between said front contacts and said rear contacts.

13. (Amended) A connector according to Claim [2] 1, wherein said contacts comprise front contacts and rear contacts extending downward from front and rear portions of said main body across said ventilation [means] opening and dustproof [means] members are provided for said front and rear contacts[, respectively].

14. (Amended) A connector according to Claim 13, wherein said dustproof [means is a] members are partition [means] members to permit separation between adjacent contacts with respect to each of said front contacts and rear contacts.

15. (Amended) A connector [fittable with a plate-like electronic module, said connector comprising a housing means having a main body mounting thereon contacts to

be connected with conductive pads provided at a front end of said electronic module and a pair of arms, projected from opposite ends of said main body, to hold said electronic module at opposite end portions thereof; a pair of ventilation means provided at said pair of arms, respectively; and wall means provided at said main body] for connecting a mother board and a plate-like electronic module with electrical conductive pads at an end part, comprising a housing, ventilation openings and wall members, wherein

the housing is mounted on mother board and provided with a main body and a pair of arms,

the main body has contacts of which one end is adapted for electrical connection to the mother board and an opposite end is adapted for electrical connection with the electrical conductive pad of the electronic module,

the pair of arms extend from ends of the main body to secure the electronic module above the mother board a predetermined distance when the electrical conductive pads of the electronic module are connected to the contacts,

the ventilation openings are disposed under the pair of arms and provide air to flow between the mother board and the electronic module,

the wall member is provided under the main body.

16. (Amended) A connector according to Claim 15, wherein [said] at least one of the ventilation [means] openings has a configuration to extend in opening toward outside.

17. (Amended) A connector according to claim 15, [wherein there is provided] further comprising a wall member to interconnect ends of said pair of arms.

19. (Amended) A connector according to Claim 8, [wherein an upper plate is attached for a topside space that appears when two or more adjacent connectors fitting said electronic modules therein are coupled with each other] further comprising an upperplate attached to a surface of the pair of arms to provide a closed volume between the two adjacent connectors.

20. (Amended) A connector according to Claim 6, wherein said contacts comprise front contacts and rear contacts extending downward from front and rear portions of said main body across said ventilation [means] opening, and said front contacts and said rear contacts each have a streamline section toward an air flowing direction.